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Group Art Unit: 2666

**Remarks**

The applicants have submitted formal drawings including the approved amendments under separate cover since the formal drawings cannot be submitted by facsimile.

The invention relates to a switched network, for example, including switched virtual connections, or soft permanent virtual connections, where calls are set up through the network by call setup messages propagating over a signaling link. The invention addresses the problem that in the prior art, when failure occurred in a signaling link (or port forming part of the link), the connections associated with that signaling link would be released in an arbitrary manner, which meant that connections with a lower level of service might be re-established either by the user of the network before connections with a higher level of service. In the invention the entire connection is released before being re-established.

Ogura addresses a rather different problem from the invention. Ogura is clearly concerned with permanent virtual connections where a failure occurs in one of the physical links. In such an event, Ogura does not tear down the connection, he maintains it and merely re-routes the affected virtual paths via an alternative route. The purpose of re-rerouting the affected virtual paths in Ogura is precisely to maintain the existing connections contained within the virtual paths between the end users. Unlike the situation in the invention, where the entire connection from end to end is released, resulting in the need to set up a new connection, in Ogura the end user sees his connection remain intact. In the prior art discussed by Ogura, in order to re-route the virtual paths from a particular node it was necessary to send the entire contents of the VPI table of that node to the alternate nodes. Instead of sending the entire contents of the VPI table, Ogura sends a short message that the intermediate node uses to establish alternate paths from the originating node to the destination node on the other side of the failed node in order to re-route and maintain the existing connections, which are the actual channels between end users.

Ogura does not teach a group of connections associated with a signaling link, neither, as the Examiner has rightly noted, does Ogura teach that upon detection of the failure in a signaling connection, the associated connections are released in an order determined by their priority. The Examiner combines Ogura with Ayanoglu. However, Ayanoglu cited by the Examiner does not teach this feature. Ayanoglu relates to a reliable data link layer

for use over a wireless point-to-point link which uses a sliding window. The Examiner refers to col. 9, lines 12 to 16. The entire paragraph reads as follows:

> "Some of the signaling messages, needed to support the connection control and mobility management procedures are sent on out-of-band signaling channels, i.e. the standard signaling VCI (VCI 5) on all VPIs. Other messages are exchanged on inband signaling channels (using the same VCI as the user information), with the Payload Type (PT) field distinguishing signaling data from user traffic), or on dedicated VCIs."

This merely establishes that Ayanoglu uses a signaling channel. This has nothing to do with detecting link failures. The other paragraph the Examiner refers to reads as follows:

> "A first issue is the detection of failure. In the case of full duplex links, a failure is detected by both ends of the link failure. However, common failures involve transmitter and receiver failures in the case of optical links, and it is therefore safe to conclude that the failures should be detected by the receiving PBS".

It is not understood how these paragraphs teach "detecting a link failure based on a signaling failure" as suggested by the Examiner on page 3 of the office action. The links referred to are "wireless point-to-point' links (see col. 3, line 59), that is physical links that carry all the data, namely both signaling data and payload. Ayanoglu does not say how the link failure is detected, but Ayanoglu certainly does not say that failure of a link (physical link) carrying connections is detected by failure of a signaling link. It appears that Ayanoglu contemplates detection of link failure by physical loss of the signal at the receiver.

Moreover the motivation given by the Examiner for the combination of Ogura and Ayanoglu is "in order to quickly determine when a link has failed". The motivation must be found in the prior art, not the application under examination. It is not seen where Ayanoglu teaches that a link failure can be quickly detected by a lack of signaling, especially as it not even seen where Ayanoglu teaches detecting a link failure from a signaling failure, let alone the fact that such an action would result in quick detection of a link failure as alleged by the Examiner.

In the applicant's respectful submission, neither Ogura nor Ayanoglu teaches alone or in combination a switched signaling network wherein upon detection of a failure of a signaling connection, a group of connections associated with the signaling connection is released in an order determined by a priority indicator associated with the connections.

With regard to claim 12, Ogura does only deals with network failure, not a reduction in capacity of a logical trunk. To make it clear that the reduction is not to zero, claim 12 has been amended to make it explicitly clear that at least some of the connections are maintained, although this was believed implicit in the original wording referring to a 'reduction" in capacity as opposed to an outright failure. In a practical embodiment, claim 12 relates to an IMA system wherein a logical trunk consists of a plurality of physical trunks. Bandwidth capacity is reduced when some of the trunks fail, and in this case a selected group of connections is released to bring the bandwidth of the connection into line with the available trunk capacity. Ogura does not disclose this feature. Moreover, it should be noted that that once the group of connections has been selected the individual connections are released in order from the highest priority to the lowest. However, the connections are selected in reverse order of priority, i.e. from the lowest to the highest (see claim 13). When some of the bandwidth capacity is lost, the connections to be released are those with the lowest priority since it is desirable if possible to maintain the higher priority connections over the existing logical trunk. Once the group for release has been selected, the higher priority connections are selected first so that they may be re-established as quickly as possible. This feature is clearly not disclosed in Ogura, namely selecting the connections in the order from low to high, and releasing them in the order from high to low. While it is believed that claim 12 is clearly patentable for the reasons set forth above, in the absence of any such teaching it is believed that it should be beyond dispute that claim 13 is patentable.

With regard to the remaining dependent claims, the Examiner repeatedly relies on unsupported statements that "one skilled in the art would recognize that...". The applicants respectfully challenge such statements in each case and request that the Examiner provide evidence thereof.

It is believed that this application is in condition for allowance. Accordingly, reconsideration and allowance are respectfully requested.

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Respectfully submitted,

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Applicant(s): HO, Esmond et al

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Invention: METHOD AND APPARATUS FOR PRIORITIZED RELEASE OF CONNECTIONS IN A COMMUNICATIONS NETWORK

I hereby certify that this Response to the Office Action dated April 9, 2003
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